

JOURNAL
OF
SOUTH AFRICAN BOTANY
VOL. XXIV.

Published: 29TH SEPTEMBER, 1958.

A NEW LITHOPS FROM THE CALVINIA KAROO

By

H. A. LÜCKHOFF
(With Plates VII—X)

Lithops viridis H. Lückhoff sp. nova.

Corpuscula turbiniformia 1.7—4.8 cm. alta, apice 0.8—1.6 cm. lata, 1.1—2.3 cm. longa, fissura 0.8—1.5 cm. alta; folia aequalia vel subaequalia, convexa griseo-viridia; fenestra magna bene visa, pellucida, viridis integra, interdum obscure bullata, bullis glaucis ad 0.1 cm. diam., margine exteriore plano vel minute dentato vel sinuolata, margine interiore plano; sepala ovato-lineariter obtusa, apicem versus granulata, 0.9 cm. longa, basi 0.5 cm. lata; petala in seriebus duabus, 1.6 cm. longa, 0.35 cm. lata, lineariter obtusa aequalia aurea; discus conspicuus crenulatus; stamina columnam compressum, basi 0.6 cm., apice 0.3 cm., filamentis albis, glabris vel in medio papillatis, 0.9 cm. longa, antheris aureis; ovario obscure lobato, lobis leviter compressis, stylo filiformi 1.1 cm. longa, stigmatibus 5; capsula 5-partita, semina minute fusca pyriformia.

Growths usually in clumps of 2 to 4 and occasionally up to 10, turbiniform, lobes generally of more or less equal size and markedly convex, sometimes slightly obliquely convex; plant bodies 1.7—4.8 cm. tall, 1.1—2.3 cm. long and 0.8—1.6 cm. broad, greyish green to olive-green occasionally with pinkish tinge towards upper part and window margin, fissure opening slight, up to 0.2 cm. wide in natural resting stage but tending to widen considerably and up to 1.5 cm., with leaves gaping, in cultivation. Window large covering practically the whole upper surface, bright green to bright olive-green, transparent, frequently obscurely mottled with small, inconspicuous, milky-green islands up to 0.1 cm. in diameter. The occurrence of this mottling is extremely variable, generally it is so slight that plants have to be closely examined to observe it,

frequently it is completely absent and rarely quite pronounced with the markings coalescing to form a hazy marbling or reticulation on the surface. Inner window margin usually entire, straight to slightly curved, outer margin entire to slightly denticulate to wavy. Flowers up to 3 cm. in diameter with peduncle enclosed; sepals nearly equal, 0.9 cm. long and 0.5 cm. broad at base, obtuse, inconspicuously granulated and reddish towards the apex; petals obtuse, in two series and nearly equal in length, golden yellow, white at base, 1.6 cm. long and 0.35 cm. broad tapering to 0.05 cm. at base; stamens in compressed column 0.6 cm. broad at base and 0.3 cm. at apex; filaments 0.9 cm. long, white, glabrous to minutely papillate, anthers golden; ovary 0.6 cm. long and 0.35 cm. broad, obscurely lobed, lobes compressed, style filiform, stigmas five, 1.1 cm. long and overtopping stamens; fruit capsule 0.8 cm. long when closed, seeds minute, pear shaped, dark brown.

Habitat: Between Calvinia and Loeriesfontein in shale ridges. Flowering end of March through April.

Lithops viridis was found by Mr. L. Hill of Cape Town and the writer, during October 1956, growing on the top of a flat kopjie forming an outlier to a low range of mountains and at an estimated altitude of 1,000—1,300 metres. The locality falls within the winter rainfall area of the Cape and has an estimated annual rainfall of 150—200 mm. The plants grow firmly wedged in between solid, parallel, brown shale ridges which generally protrude slightly above the surface of the soil. Frequently these shale ridges are so close together that the individual bodies of a plant have a linear alignment on account of restricted growing space, and sometimes even the two lobes of a body are offset for the same reason. *L. viridis* is a very distinct species and easily recognised by the unusually bright green to bright olive-green colour of the large, smooth, transparent, and generally unbroken window, and the clearly defined practically entire window margins. According to Nel's classification it falls into the sub-group *Arubrae* of the *Fenestrate* and is most closely related to *L. comptonii*, which grows approximately 120 miles to the S.S.E. The main resemblance between *L. viridis* and *L. comptonii* is in the general form of the plant bodies. In both species the two lobes of a body tend to diverge and gape, particularly in cultivation. The characteristic purple-red to brown window colour of *L. comptonii* does not, however, occur naturally in *L. viridis*. Under cultivation at the coast (Cape Town) occasional specimens of *L. viridis* have developed plum-coloured windows and a few plants have also developed scattered, deep purple pigmentation dots, up to 1 mm. in diameter, and imbedded in the plant tissue below the window surface. These characters were not noticed

PLATE VII. *Lithops viridis* in natural setting. $\times 1/2$

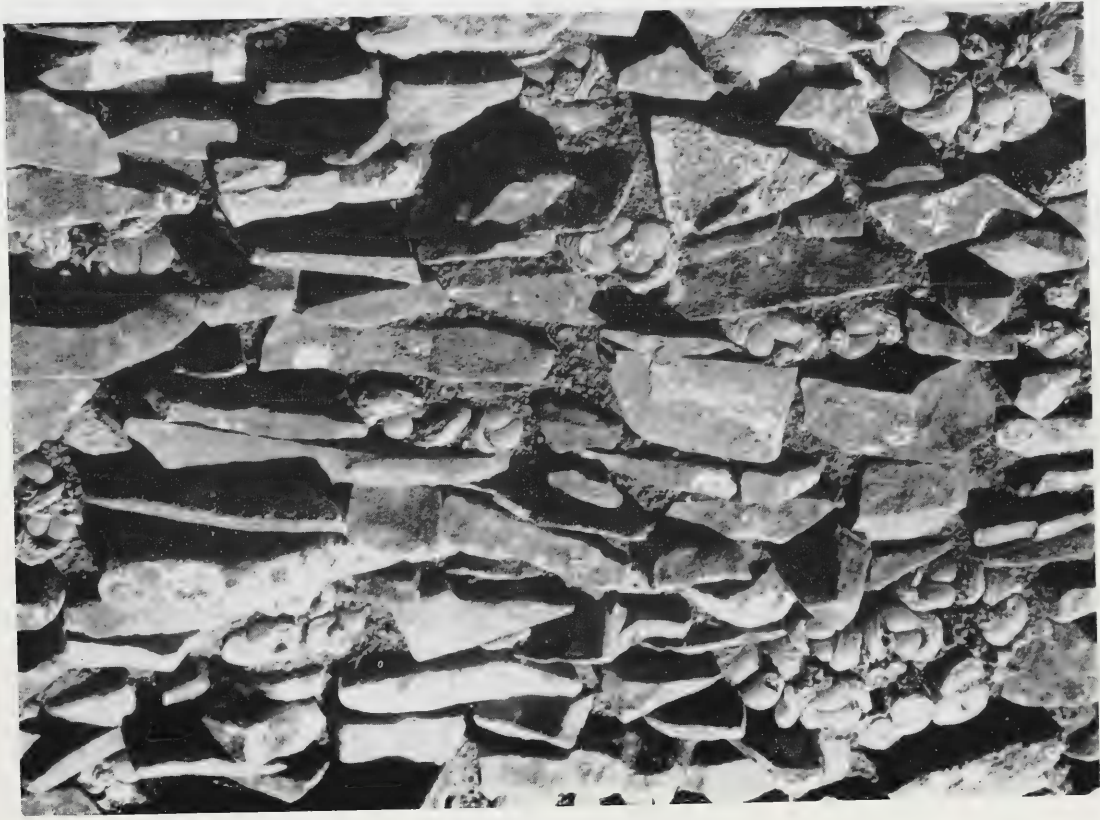


PLATE VIII. *Lilrops viridis*
Freshly collected veld plants. Natural size.





PLATE IX. *Lithops viridis*
showing typical, transparent, well defined window. 3

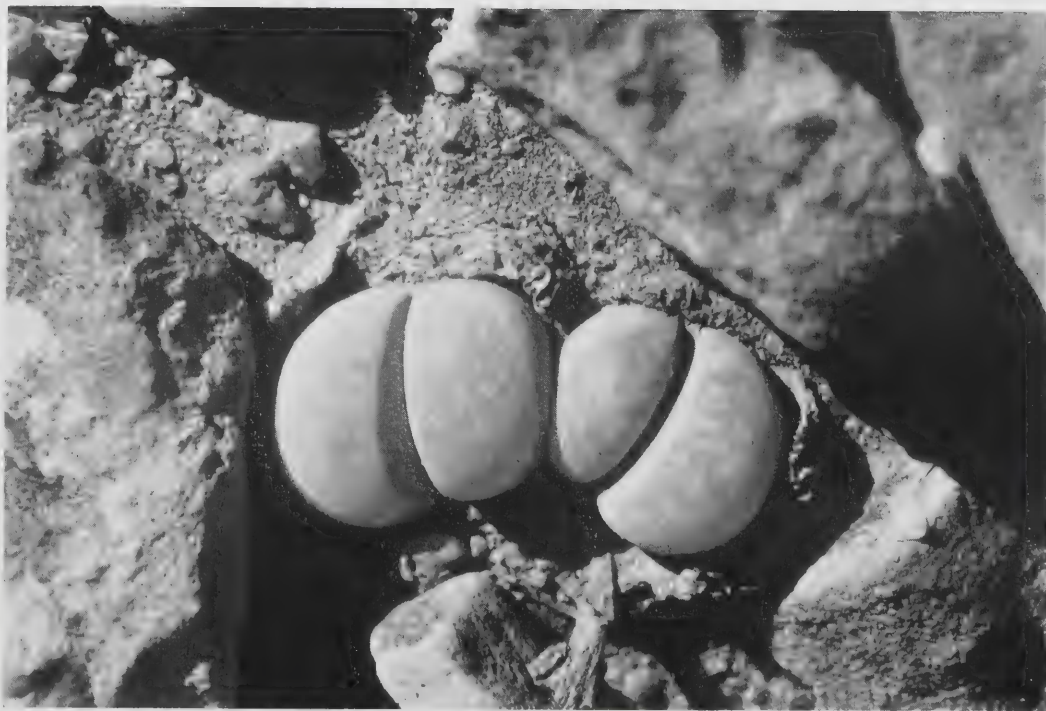


PLATE X. *Lithops viridis*
An extreme case of window mottling. This type of window is rare and
not characteristic. $\times 2$

in any of the plants at the time of collection and it appears likely that they have been induced by coastal climatic conditions.* In the type specimens, which are currently in cultivation at Pretoria where climatic conditions more closely approach those of the natural habitat of the species, there is no trace of these colour characters. Occasionally, when growing in the shade under bushes, *L. comptonii* develops an olive-green window colour but this is not typical and the green is never as bright as in *L. viridis*. In *L. comptonii* the window is frequently broken up into a large number of confluent, irregularly shaped, whitish islands forming a delicate reticulation on the surface. In *L. viridis* the window is typically unbroken or contains only a few scattered, milky-green islands. In rare cases the window is broken up but then the reticulation is never as delicate as in *L. comptonii*. The outer window margin of *L. viridis* is also generally entire to slightly wavy and not typically finely toothed as in the case of *L. comptonii*. In both *L. viridis* and *L. comptonii* the flower peduncle is enclosed and the petals are prevented from expanding fully in the early stages and rest on the windows. The flowers of *L. viridis*, however, are significantly larger than those of *L. comptonii*. The nearest neighbours of *L. viridis* are *L. villettii*, *L. otzeniana*, *L. divergens* and *L. weberi*, which grow approximately 50 miles to the north, 50 miles to the N.N.W., 75 miles to the N.W. and 90 miles to the S.S.E., respectively. *L. viridis* does not resemble any of these species, either in window colour or pattern, and also grows under completely different soil conditions.

* A more recent visit to the same area revealed that occasional plants do, in fact, bear scattered purple dots [Hall 1380] and were observed both by Hill and Hall in the veld, May, 1958.—Ed.